

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

5 Applicant(s): Boer et al.
Case: 8-28-6-6
Serial No.: 10/672,657
Filing Date: September 26, 2003
Group: 2616
10 Examiner: Pawaris Sinkantarakorn

Title: Method and Apparatus for Detecting a Collision in a Carrier Sense Multiple Access Wireless System

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CORRECTED APPEAL BRIEF

20 Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

25 Sir:

In response to the Notice of Non-Compliant Appeal Brief, Appellants hereby submit this Corrected Appeal Brief. Applicants hereby appeal the final rejection dated January 10, 2008, of claims 1-10 and 18-23 of the above-identified patent application.

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REAL PARTY IN INTEREST

The present application is assigned to Agere Systems, Inc., as evidenced by an assignment recorded on February 2, 2004 in the United States Patent and Trademark Office at Reel 014951, Frame 0624. The assignee, Agere Systems, Inc., is the real party in interest.

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RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

The present application was filed on September 26, 2003 with claims 1 through 23. Claims 11-17 were cancelled in the Amendment and Response to Office Action dated March 7, 2008. Claims 1-10 and 18-23 are presently pending in the above-identified patent application.

5 Claims 1, 5-6, 8-10, 11, 15, and 16 are rejected under 35 U.S.C. §102(b) as being anticipated by Wang et al. (United States Patent No. 5,721,733), claims 2, 7, 12, 17, 18, and 20-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wales in view of Curriyan et al. (United States Patent Application Publication Number 2003/0026283), and claims 3, 4, 13, 14, and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wang in view of Curriyan et al.
10 as applied to claims 1, 2, 11, 12 and 18 above, and further in view of Fukuhara (United States Patent Number 6,643,296). Claims 1 and 18 are being appealed.

STATUS OF AMENDMENTS

The amendments filed in the Amendment and Response to Office Action dated
15 March 7, 2008 have been entered.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to a first wireless communication device (FIG. 1: 110), comprising: a controller capable of receiving an acknowledgement (ACK) message transmitted by a second wireless communication device (FIG. 1: 110) in response to a message transmitted by said first wireless communication device (FIG. 1: 110; page 6, lines 3-24), and a collision detector (FIG. 4: 400) that monitors a wireless medium for collisions of said acknowledgement message if a measured energy level exceeds a predefined threshold (page 6, line 25, to page 7, line 9).

25 Independent claim 18 is directed to a method for detecting a collision in a wireless communication network (FIG. 1: 100), said method comprising the steps of: determining if an acknowledgement message is received in response to transmitted data (page 6, lines 3-24); and monitoring said wireless communication network to detect a collision of said acknowledgement

message if a measured energy level exceeds a predefined threshold (page 6, line 25, to page 7, line 9).

STATEMENT OF GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

5 Claims 1, 5-6, 8-10, 11, 15, and 16 are rejected under 35 U.S.C. §102(b) as being anticipated by Wang et al., and claims 2, 7, 12, 17, 18, and 20-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wales in view of Curriyan et al.

ARGUMENT

10 Independent Claim 1

Independent claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by Wang et al. Regarding claim 1, the Examiner asserts that Wang discloses a collision detector that monitors a wireless medium for collisions of the acknowledgement message (col. 5, line 66, to col. 6, line 8). Appellants also note that, regarding claim 18, the Examiner acknowledges that 15 Wales does not disclose that the collision detector evaluates an energy level and detects a collision based on the energy level. The Examiner asserts, however, that Curriyan et al. discloses a collision detection module that evaluates a power indication signal (citing par. 0072), and detects a collision *based on the evaluated power indication signal* (citing par. 75 and Table 1). In the Advisory Action, the Examiner asserts that Curriyan discloses that a comparator 20 receives a SNR indication signal and a threshold signal having a threshold value T2, then the comparator compares these inputs and generates an output signal 459 that indicates the result of this comparison (paragraph 74) and that a collision is detected when the output signal 459, which indicates the average SNR of a burst transmission, is low.

Appellants note that independent claim 11 has been cancelled and independent 25 claim 1 has been amended to conform it to the scope of original claim 18.

First, to be precise, claim 1 does not merely require detect(ing) a collision of an acknowledgement message, as suggested by the Examiner. Rather, claim 1, as amended, requires detect(ing) a collision of said acknowledgement message *if a measured energy level*

exceeds a predefined threshold. The Examiner does not allege that Wang discloses a collision detector that monitors a wireless medium for collisions of an acknowledgement message *if a measured energy level exceeds a predefined threshold*, and Appellants find no disclosure or suggestion of this feature in Wang.

5 Appellants also note that, in par. 0076 of Curriyan et al., it is clear that output signal 457 indicates the power of the data portion of a burst transmission. In Table 1, it is clear that output signal 457 does **not** correlate with whether a collision is detected. In fact, a collision can be detected if the output signal 457 is high (second row), medium (fourth row), low (sixth row) or high (seventh row). Thus, a collision is not detected in Curriyan et al. “*if a measured energy level exceeds a predefined threshold*,” as required by independent claim 1.

10 Regarding the Examiner’s assertion that Curriyan discloses that a collision is detected when the output signal 459 indicates the average SNR of a burst transmission is low, Appellants note that a SNR is a *signal-to-noise ratio* and is *not* a measured *energy level* (i.e., not a measured level of energy), as would be apparent to a person of ordinary skill in the art.
15 Curriyan does not disclose or suggest determining a *measured energy level* or determining *if a measured energy level exceeds a predefined threshold*.

20 Thus, Wang, Wales, Curriyan, and Fukuhara, alone or in combination, do not disclose or suggest a collision detector that monitors a wireless medium for collisions of said acknowledgement message *if a measured energy level exceeds a predefined threshold*, as required by independent claim 1.

Independent Claim 18

Independent claim 18 was rejected under 35 U.S.C. §103(a) as being unpatentable over Wales in view of Curriyan. Regarding claim 18, the Examiner acknowledges that Wales does not disclose that the collision detector evaluates an energy level and detects a collision based on the energy level. The Examiner asserts, however, that Curriyan et al. discloses a collision detection module that evaluates a power indication signal (citing par. 0072), and detects a collision *based on the evaluated power indication signal* (citing par. 75 and Table 1). In the Advisory Action, the Examiner asserts that Curriyan discloses that a comparator receives a SNR

indication signal and a threshold signal having a threshold value T2, then the comparator compares these inputs and generates an output signal 459 that indicates the result of this comparison (paragraph 74) and that a collision is detected when the output signal 459, which indicates the average SNR of a burst transmission, is low.

5 First, to be precise, claim 18 does not merely require detect(ing) a collision based on the evaluated power indication signal, as suggested by the Examiner. Rather, claim 18 requires detect(ing) a collision of said acknowledgement message *if a measured energy level exceeds a predefined threshold.*

10 In par. 0076 of Curriyan et al., it is clear that output signal 457 indicates the power of the data portion of a burst transmission. In Table 1, it is clear that output signal 457 does **not** correlate with whether a collision is detected. In fact, a collision can be detected if the output signal 457 is high (second row), medium (fourth row), low (sixth row) or high (seventh row). Thus, a collision is not detected in Curriyan et al. “*if a measured energy level exceeds a predefined threshold,*” as required by independent claim 18.

15 Regarding the Examiner’s assertion that Curriyan discloses that a collision is detected when the output signal 459 indicates the average SNR of a burst transmission is low, Appellants note that a SNR is a *signal-to-noise ratio* and is *not* a measured *energy level* (i.e., not a measured level of energy), as would be apparent to a person of ordinary skill in the art. Curriyan does not disclose or suggest determining a *measured energy level* or determining *if a measured energy level exceeds a predefined threshold.*

20 Thus, Wang, Wales, Curriyan, and Fukuhara, alone or in combination, do not disclose or suggest monitoring said wireless communication network to detect a collision of said acknowledgement message *if a measured energy level exceeds a predefined threshold,* as required by independent claim 18.

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Conclusion

The rejections of the cited claims under section 103 in view of Wang, Wales, Curriyan, and Fukuhara, alone or in any combination, are therefore believed to be improper and

should be withdrawn. The remaining rejected dependent claims are believed allowable for at least the reasons identified above with respect to the independent claims.

The attention of the Examiner and the Appeal Board to this matter is appreciated.

Respectfully,

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APPENDIX

1. A first wireless communication device, comprising:
 - a controller capable of receiving an acknowledgement (ACK) message transmitted by a second wireless communication device in response to a message transmitted by said first wireless communication device, and
 - a collision detector that monitors a wireless medium for collisions of said acknowledgement message if a measured energy level exceeds a predefined threshold.
- 10 2. The first wireless communication device of claim 1, wherein said collision detector evaluates an energy level and detects a collision based on said energy level.
3. The first wireless communication device of claim 2, wherein said collision detector includes a payload detector and detects a collision based on a detected payload.
- 15 4. The first wireless communication device of claim 3, wherein said collision detector includes a preamble detector and detects a collision based on a detected preamble.
5. The first wireless communication device of claim 1, wherein said collision detector is activated after said first wireless communication device transmits data.
- 20 6. The first wireless communication device of claim 1, wherein said collision detector does not detect a collision if an ACK message or data header is received.
- 25 7. The first wireless communication device of claim 1, wherein said device is implemented in accordance with the IEEE 802.11 Standard.

8. The first wireless communication device of claim 1, wherein said controller determines if said second wireless communication device correctly received said transmitted message by monitoring said wireless medium.

5 9. The first wireless communication device of claim 1, wherein said controller determines that said second wireless communication device did not likely receive said message if a collision is detected.

10 10. The first wireless communication device of claim 1, wherein said controller determines that said collision was a cause of not receiving said ACK message.

11-17 (Cancelled).

15 18. A method for detecting a collision in a wireless communication network, said method comprising the steps of:

 determining if an acknowledgement message is received in response to transmitted data; and

 monitoring said wireless communication network to detect a collision of said acknowledgement message if a measured energy level exceeds a predefined threshold.

20 19. The method of claim 18, wherein said monitoring step further comprises the step of detecting a payload and said collision detection is further based on said detected payload.

25 20. The method of claim 18, wherein said monitoring step further comprises the step of detecting a preamble and said collision detection is further based on said detected preamble.

21. The method of claim 18, wherein said monitoring step is performed after said data is transmitted.

22. The method of claim 18, wherein said monitoring step does not detect a
5 collision if an ACK message or data header is received.

23. The method of claim 18, wherein said method is implemented in accordance with the IEEE 802.11 Standard.

EVIDENCE APPENDIX

There is no evidence submitted pursuant to § 1.130, 1.131, or 1.132 or entered by the Examiner and relied upon by appellant.

RELATED PROCEEDINGS APPENDIX

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 CFR 41.37.